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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,240	05/03/2001	Mark Dunn	R&G C-323	1405

7590 06/18/2003
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2026 Rambling Road
Kalamazoo, MI 49008-1699

EXAMINER

NGUYEN, KIMBINH T

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 06/18/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/831,240

Applicant(s)

DUNN, MARK

Examiner

Kimbinh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

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DETAILED ACTION

1. The Preliminary Amendment filed on 9/4/01 was entered.
2. Claims 1-8 are pending in the application.

Information Disclosure Statement

3. The examiner has considered the references listed in the information disclosure statement (IDS) filed 4/9/01 (paper No. 3) (see attached form PTO-1449).

Specification

4. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
5. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

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REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).
"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37
CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A
"Sequence Listing" is required on paper if the application discloses a
nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if
the required "Sequence Listing" is not submitted as an electronic
document on compact disc).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negated by the manner in which the invention was made. }

7. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Ashton (5,729,672) in view of Duluk, Jr. et al. (6,476,807).

Claim 1, Ashton discloses defining a group of surfaces representing each object
in the image (col. 3, lines 51-53; figs. 2A-2C; col. 15, lines 50-51); for each area of the
display, generating a depth value for surface of object in dependence on the distance of
surface from an image plane (col. 16, lines 39-41); applying (adding) shading (a shade
which has been allocated to that surface, col. 4, lines 19-21) and texture data (a grey
scale value or an R,G,B value for a full color system, col. 4, lines 20-23) to the surfaces

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(col. 13, lines 34-37; fig. 13); Ashton does not teach determining opacity by the alpha values; however, Duluk, Jr. et al. teaches evaluating texture data (alpha blending) to determine whether any texture data applied to a surface is fully opaque (the blending is turn off; col. 47, line 47 through col. 48, line 24); storing the depth or z values (zfar and znear) for opaque textures of objects at elementary areas (tiles) in a depth testing means; comparing the depth of surface (sample) with the depth values for the opaque object (opaque layer; col. 49, lines 1-29); discarding the surface of the subsequent objects (second sample is hidden by zfar sample) which already have a fully opaque surface closer to the image plane (the second sample is currently potentially visible; col. 51, lines 40-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the alpha blending and depth testing for opacity object as taught by Duluk into shading 3D image of Ashton's method for determining a primitive is opaque, because performing alpha test and comparison tests, it would provide structure a hidden surface removal system for a deferred shading graphics pipeline, identifying of potentially visible objects (3D shading) to improve the efficiency of the pipeline (col. 15, lines 55-60).

Claims 2 and 3, Ashton discloses textures include fully opaque and translucent (transparent) portions (col. 5, line 60 through col. 8, lines 17; fig. 4), and wherein the objects in the image are first sorted from front to back and the fully opaque elements are used to inhibit texturing behind them, the objects are sorted from back to front and any non-opaque areas have texturing. This is a 3D image synthesis pipeline, Ashton does not teach sorted transparent mode. However, Duluk, Jr. et al. teaches sorted

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transparent mode first from front to back and the opaque geometry is not sent down to the pipeline (inhibit texturing behind them; col. 33, lines 42-54); the objects are sorted from back to front any non-opaque (transparent) have texture by sending the backmost transparent surface down the pipeline (col. 32, line 61 through col. 33, line 41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the sorted transparent mode as taught by Duluk into shading 3D image of Ashton's method for determining texture data, because it may enhance image quality, especially when there are lots of visible depth complexity for transparent surfaces (col. 34, lines 45-47).

Claims 4 and 8, Ashton discloses dividing the image with rectangular areas (rectangular tiles) (col. 12, lines 10-23) and shading and texturing each rectangular (tile) by post processing system (col. 13, lines 30-40).

Claims 5-7 (apparatus claims) comprising claimed elements corresponding to the method claims 1-3; therefore, the rationale provided in the rejection of claims 1-3 is incorporated here in.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kimbinh Nguyen** whose telephone number is **(703) 305-9683**. The examiner can normally be reached **(Monday- Thursday from 7:00 AM to 4:30 PM and alternate Fridays from 7:00 AM to 3:30 PM)**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

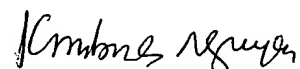
Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Part II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the Technology Center 2600 Customer Service Office
whose telephone number is (703) 306-0377.

June 16, 2003



Kimbinh Nguyen

Patent Examiner AU 2671